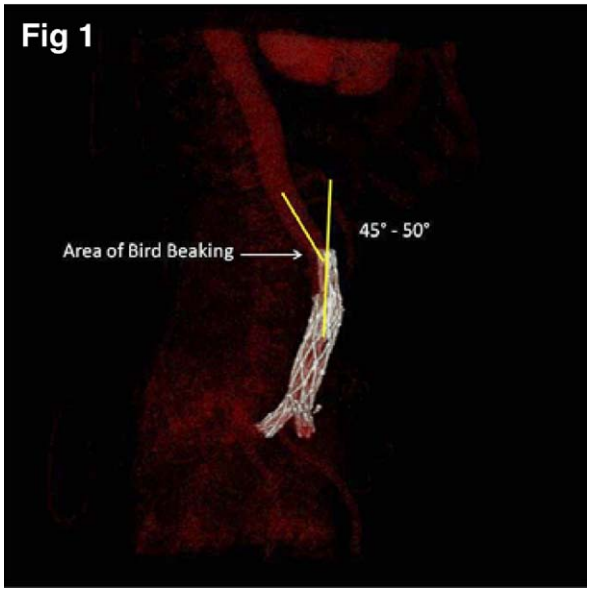
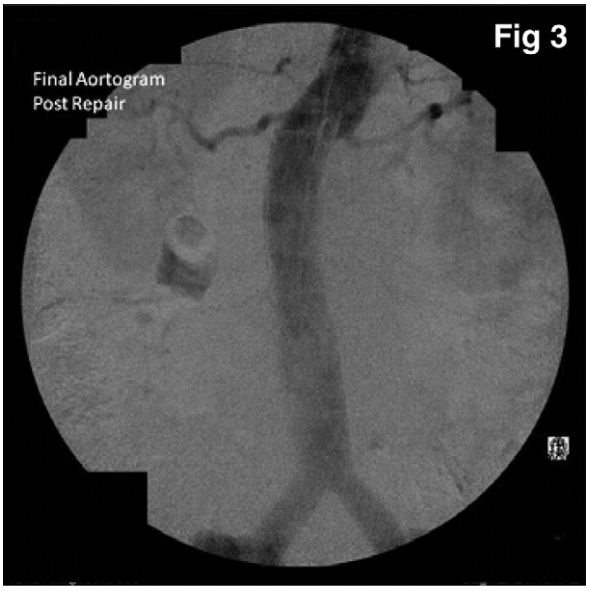
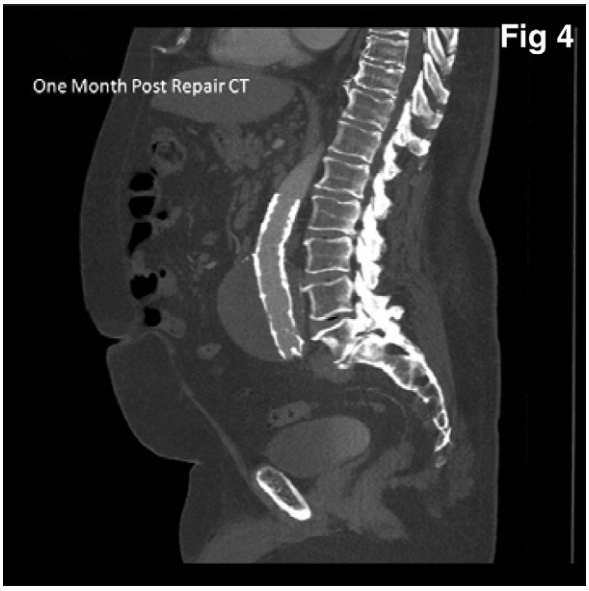
aneurysm (AAA) at another institution. On preoperative sizing, the infrarenal neck measured 26 mm in diameter × 51 mm in length, with 45°-50° angulation. An Endologix Powerlink (28 to 16- × 140-mm bifurcated and 28- × 75-mm cuff) endograft was used, and deployment was uncomplicated. The 1-month CT scan revealed good flow through the endograft without endoleak. Neck angulation and low deployment caused a lip of the endograft to protrude intraluminally, creating a "bird's beak" effect (Fig 1). A CT scan at 6 months demonstrated a complete collapse of the proximal 80% of the cuff. The lumen of the cuff appeared occluded, and flow was seen posterior to the collapsed portion (Fig 2). The patient was asymptomatic, with palpable femoral pulses. He underwent an aortogram through a brachial approach, demonstrating collapse of the proximal cuff with flow posterior to the graft. A wire and 16F sheath were placed from the groin into the collapsed segment in preparation for balloon re-expansion. The graft re-expanded spontaneously with passage of the sheath. To cover the remainder of the infrarenal neck and add radial force, a Cook Zenith TX2 thoracic endograft (30 mm × 80 mm) was placed extending from the renal arteries to just proximal to the aortic bifurcation. A Cordis Palmaz (40-10) stent was then placed to secure the grafts. Completion angiogram demonstrated good flow through an open endograft and no evidence of endoleak (Fig 3). A 1-month postoperative CT scan demonstrated continued graft patency without endoleak (Fig 4).







Conclusions: Although rare, a "bird's beak" effect can occur in the abdominal aorta, leading to collapse of an endograft. Preoperative planning for EVAR should avoid creating a "bird's beak" effect with endograft placement.

Proximal Aortic Aneurysm and Pseudoaneurysm Formation Following Endovascular Thoracic Aortic Aneurysm Repair

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Background: Thoracic endovascular aortic repair (TEVAR) of descending thoracic aortic aneurysms has been frequently performed since the release of commercially available endografts. TEVAR is an attractive option for the treatment of complex aortic disease and maintains a relatively low reintervention rate. This case series describes three patients who developed proximal fixation aneurysms that were discovered with meticulous postoperative endograft surveillance and were successfully repaired with a secondary endovascular intervention.

Cases: Three patients presented with descending aortic pathology and underwent successful thoracic endograft placement. Two patients had previously undergone open arch reconstruction. Postoperative surveillance imaging showed that 2 pseudoaneurysms and 1 true aneurysm had developed at the proximal fixation sites. Repairs with a secondary endovascular intervention were successful in all three patients. Midterm follow-up imaging showed complete resolution of the proximal fixation aneurysms.

Conclusions: Aortic aneurysmal dilation and pseudoaneurysm formation at the proximal fixation site of TEVAR devices is a known but infrequently seen complication. A pre-existing history of aortic arch reconstruction may increase the risk of proximal fixation pseudoaneurysm formation. Close endograft surveillance is essential, and secondary endovascular interventions can often be used to repair these problems.

Management of Inadvertent Iatrogenic Subclavian Artery Injury With an Extravascular Bio-Inert Sealant

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Background: Inadvertent arterial puncture is a complication of placement of central catheters; this can lead to arterial occlusion, embolism, pseudoaneurysm formation, vessel laceration, or dissection. To prevent the occurrence of these complications, the central catheter has to be removed, but direct pressure is not an adequate option in the subclavian artery. The management of this complication does not have a standard accepted treatment.

Case: An 83-year-old man who was admitted to another hospital with congestive heart failure exacerbation and required mechanical ventilation. Right central catheter placement was attempted but was complicated by placement in the right subclavian artery. He was transferred to our institution for management. A diagnostic angiogram was performed with access through the right femoral artery and confirmed the presence of the right subclavian artery central venous catheter. We obtained wire access to the right subclavian artery and exchanged the catheter for a 6F Pinnacle sheath (Fig 1). Then we placed a Shuttle sheath in the right subclavian artery and used the Mynx 6/7F extravascular bio-inert sealant. We performed a vessel closure of the right subclavian artery, with concomitant balloon angioplasty of the subclavian artery with a 4 atm pressure (Fig 2). A final angiogram showed no evidence of extravasation and no residual stenosis (Fig 3).

Conclusions: This case demonstrated the use of an extravascular bio-inert sealant for control of an inadvertent arterial injury in the control setting of an angiography suite. We proposed the use of this vascular closure device for its durable hemostasis by placing the sealant on the surface of the artery and sealing both the arteriotomy and the tissue tract, which has the advantage of no intravascular components and preserves vessel integrity.

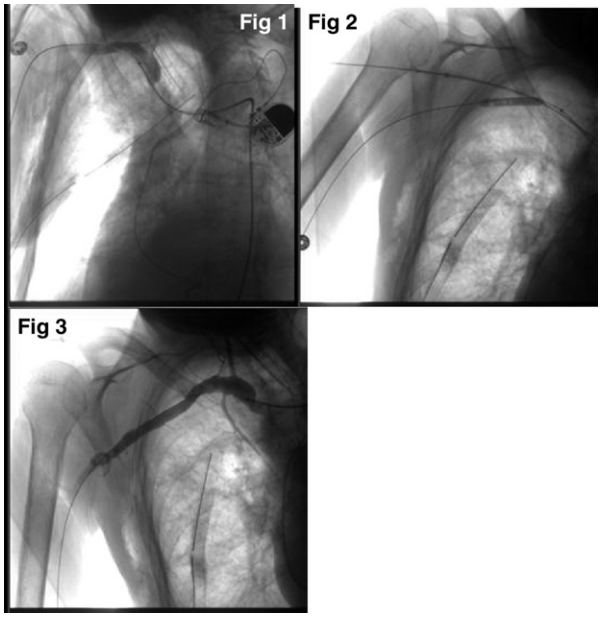

Fig 1. Fig 2. Fig 3.

Kissing Iliac Artery Stents For Hypogastric Artery Occlusion During EVAR

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Case: During an endovascular aneurysm repair (EVAR), dissection occurred in the bilateral common and external iliac arteries, resulting in acute bilateral hypogastric artery occlusion. Attempts were made to re-establish flow to the left internal iliac artery through a retrograde ipsilateral approach, without success. A left brachial approach was used to gain access to the left internal iliac artery. Kissing angioplasty and subsequent stent placement with two self-expanding stents was performed, raising the iliac bifurcation to the level of the stent graft in the common iliac artery to salvage the internal iliac artery. The patient postoperatively developed right lower extremity weakness and paresthesia, despite a normal ABI >0.7, which raised the question of spinal cord-related injury from pelvic malperfusion and suggested that if both stenosis were not treated, this could have resulted in significant morbidity.

Postoperative image at 1 month.